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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,980	09/12/2003	Anthony Teillet	100318-00111	6120

7590 05/02/2006  
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EXAMINER

DINH, TRINH VO

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/660,980

Applicant(s)

TEILLET

Examiner

Trinh Vo Dinh

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 21, 23, 24 and 26-29 is/are rejected.
- 7) ☒ Claim(s) 4-20, 22 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is a response to the RCE filed 02/28/2006.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Gottl et al (US 6,943,732).

Gottl discloses an antenna comprising a first arrangement of dipole elements (9, 109a in Figs. 2 or 7) adapted to provide a first beam in a first band (col. 1, lines 30-40), and a second arrangement of dipole elements (9, 109b in Fig. 2 or 7) adapted to provide a second beam in a second band, the antenna adapted to provide a variable downtilt of the first and second beam (col. 1, lines 30-40), and wherein the dipole elements (9, 109a, 109b) are further configured to simultaneously provide the first beam and second beam each having a 90 degree azimuth beamwidth (cross dipole antenna elements 9, 109a, 109b will provide 90 degree beamwidth).

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottl in view of Le et al (US 2005/0001778 of record).

With respect to claim 2, Gottl disclose every feature of the claim invention except a microstrip feeder. Le discloses a first band (dipoles 14) being fed by a microstrip (30, 64) disposed upon a printed circuit board (50). The use of microstrip networks for feeding antennas has been well known in the art. Therefore, to provide Gottl's antenna with microstrip network as taught by Le for feeding dipole elements would have been obvious to one skill in the art.

With respect to claim 3, Le discloses, in claims 12-13, a first dielectric member (56) slidably disposed over the microstrip (64).

5. Claims 21 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottl in view of Wood et al (US 6,211,840 of record).

With respect to claims 23-24, Gottl disclose substantially the claimed invention as noted above in claim 1. Gottl further discloses the antenna elements (9, 109b, 109a) being dipoles (col. 4, lines 40-46). However, Gottl does not suggest a balun capacitively coupled to one said dipole. Fig. 2 of Wood shows a balun (7) capacitively coupled to one said dipole (9) and a microstrip. It would have been obvious to one skill in the art to provide Gottl's dipole antennas with Wood's balun in order to improve the antenna's performances.

With respect to claim 21, Wood discloses at least one the antenna element (Fig. 3) having an arm (13) extending at 45°.

6. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottl.

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With respect to claim 26, Gottl discloses every feature of the claimed invention except the first band being a cellular band and the second band being a PCS band. However, it is fundamental knowledge that an antenna is capable of being scaled or tuned to any desired frequency, including the cellular band and the PCS band (attached document "Antenna Frequency Scaling" discloses a dimension of an antenna can be redesigned for any frequency band as long as all of the measurement of the original antenna are scaled based on the formula). Therefore, it would have been obvious to one of ordinary skill in the art to scale Gottl's antenna elements to operate in the cellular band and PCS band since select desired operation frequency band involves the elementary application such fundamental knowledge.

With respect to claim 27, Gottl discloses, in Fig. 7, a center arrangement of the antenna dipoles (9, 109a, 109b), and a pair of dipole arrangements (109a, 109b) disposed along each side of the cellular band antenna dipoles (9).

With respect to claim 28, Gottl discloses the PCS band antenna dipoles (the dark-colored radiators 9) being mechanically configured differently than the cellular band antenna dipoles (the light-colored radiators 9) to reduce cross polarization.

With respect to claim 29, Gottl discloses, the PCS antenna dipoles (9 in Fig. 1a) having one arm extending at an angle offset at least 45 degrees from an arm of the other dipole.

***Allowable Subject Matter***

7. Claims 4-20, 22 and 25 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims and/or rewritten to overcome the objections set forth in the office action.

8. The following is a statement of reasons for the indication of allowable subject matter:

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The cited art of record fails to teach the microstrip comprising a first microstrip portion having a serpentine pattern with the first dielectric member slidably disposed thereover as defined in claim 4, or at least one said antenna element has a first arm extending generally horizontal, and another opposite second arm extending at 45° with respect to the first arm as defined in claim 22.

***Inquiry***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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*April 30, 3006*

**TRINH DINH  
PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to read 'Trinh Dinh', with a long horizontal flourish extending to the right.